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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/810,387

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Arun Kumar Singh

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EXAMINER

LANG, AMY T

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/810,387	Applicant(s) SINGH ET AL.	
	Examiner AMY T. LANG	Art Unit 3731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/10/2008 has been entered.

Claim Objections

2. **Claim 1** is objected to because of the following informalities: Claim recites "that when converted into emulsion by stirring it in 60 to 90 weight percent of water then, the emulsion is useful as a general purpose soluble cutting oil to act as a coolant/engineering aid in metalworking, having less toxicity than mineral oil based metalworking fluid and adding value to a waste product, i.e. heavy alkyl benzene." Applicant is encouraged to amend the claim so that is clearer by reciting "that when converted into emulsion by stirring it in 60 to 90 weight percent water *the emulsion is then useful* as a general purpose soluble cutting oil *that acts* as a coolant/engineering aid in metalworking, *has* less toxicity than mineral based oil, and *adds* value to a waste product, i.e. heavy alkyl benzene." Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 1-33** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The instant claim 1 recites the following where each is not supported by the instant specification:

- i. stirring the fluid with 60 to 90 wt% water to convert the fluid into emulsion
- ii. wherein the emulsion is useful as a soluble cutting oil
- iii. wherein the emulsion is useful as a coolant
- iv. wherein the emulsion has less toxicity than mineral oil (Although paragraph [0008] of the instant specification teaches the toxicity will be reduced, it does not specifically state that the toxicity will be reduced compared to mineral oil. Additionally, this paragraph does not state that the emulsion has less toxicity as recited in the instant claim).

Claims 2-33 are dependent on claim 1 and therefore are also not supported by the instant specification.

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5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 1-33** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites wherein the emulsion adds value to a waste product. However, this term is vague and unclear. Specifically, what kind of value is added? Since the claim fails to identify the added value, the claim is rendered indefinite. Claims 2-33 are dependent on claim 1 and therefore are also indefinite.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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9. **Claims 1-12 and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Anantaneni (US 6,630,430) in view of Boffa (US 5,804,537), Tanaka (US 6,245,725 B1), Camenzind (US 7,026,438 B2), Van Dam (US 6,784,142 B2), Matsushita (US 5,741,763), Zoch (US 3,902,868), and Otaki (US 4,765,917).

Anantaneni discloses a lubricating composition for a metal surface, specifically an internal combustion engine (column 1, lines 14-19; claim 39, column 38). The composition is comprised of alkyl benzenes, having 18 to 30 carbon atoms, to enhance detergency (column 1, lines 20-25, 55-58). The alkyl benzenes are present in the lubricating composition from 35 to 82 wt% of the total composition (claim 1, column 32). Anantaneni teaches the method to produce the alkyl benzenes useful in the lubricant composition, which results in a fraction by-product separated from detergent class alkyl benzene (column 3, lines 19-43). Furthermore, Anantaneni discloses the use of additives in the composition including extreme pressure additives, antioxidants, and more (column 21, lines 38-45).

Anantaneni does not specifically disclose the addition of (i) an emulsifier, (ii) a lubricity booster, (iii) an antioxidant, (iv) an antirust agent, (v) a coupling agent, (vi) a fungicide, (vii) an extreme pressure additive, (viii) a co-surfactant, (ix) an alkali component, or (x) that the composition would be converted into an emulsion when stirred with 60 to 90 wt% water so that the resulting emulsion is useful as a cutting oil and a coolant, has less toxicity than mineral oil, and adds value to a waste product.

With respect to (i) above, Boffa discloses a lubricating composition for an internal combustion engine comprised of alkylated sodium sulfonates from 5 to 80 wt% (column

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1, lines 6-10; column 4, lines 15-21; column 5, lines 18-21). This additive aids in producing superior engine deposit performance (column 3, lines 16-21). Although Boffa does not specifically disclose the alkylated sodium sulfonates additive as an emulsifier, given that the property of a compound is inseparable from the compound, it therefore would intrinsically function as one in a lubricating composition (*In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)). Since Anantaneni discloses a lubricating composition for an internal combustion engine and Boffa discloses that sodium sulfonate additives are advantageous in engine deposit performance, it would have been obvious for Anantaneni to also utilize this additive.

With respect to (ii) above, Tanaka discloses that additives are added to engine lubricating oils in order to reduce frictional losses (column 1, lines 30-34). One such additive is castor oil in an amount of 0.05 to 10 wt% (column 18, lines 28-30, 38; column 19, lines 16-19). Although Tanaka does not specifically disclose the castor oil additive as a lubricity booster, given that the property of a compound is inseparable from the compound, it would intrinsically function as one in a lubricating composition (*In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)). Since Anantaneni discloses a lubricating composition for an internal combustion engine and Tanaka discloses that additives including castor oil reduce frictional losses in an engine, it would have been obvious for Anantaneni to also utilize this additive.

With respect to (iii), (iv), and (v) above, Camenzind discloses a lubricating composition, specifically metal working fluid, comprised of additives to further improve performance properties (column 7, lines 60-66). The additives include the antioxidant

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diphenylamine, calcium petroleum sulphonates, and petroleum sulfonates each in an amount from 0.01 to 10.0 wt% (column 8, lines 2-5; column 10, line 10; column 11, lines 29 and 60). Although Camenzind does not specifically disclose the calcium petroleum sulphonates as antirust agents or the petroleum sulfonates as coupling agents, given that the property of a compound is inseparable from the compound, they would intrinsically function as such in a lubricating composition (*In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)). Since Anantaneni discloses a metal working fluid and Camenzind teaches the advantage of using these additives, it would have been obvious for Anantaneni to also utilize these additives.

With respect to (vi) above, Van Dam discloses a lubricating composition for an internal combustion engine comprised of specific additives (column 2, lines 48-59). The additives include a hindered phenol, which overlaps the instantly claimed phenol, from 0 to about 2.0 wt% (column 5, lines 28-31). The phenol additive aids in lowering water deposits in engines, improving dispersion of soot in engines, and controlling wear and valve train wear (column 2, lines 52-59). Although Van Dam does not specifically disclose the phenol additive as a fungicide, given that the property of a compound is inseparable from the compound, it would intrinsically function as such in a lubricating composition (*In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)). Since Anantaneni discloses a lubricating composition for an internal combustion engine and Van dam teaches the advantage of a phenol additive in an internal combustion engine, it would have been obvious for Anantaneni to also utilize this additive.

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With respect to (vii) above, Matsushita discloses a metal working lubricant comprised of additives conventionally used in lubricant oils (column 1, lines 13-23; column 4, lines 16-22). One of these conventional additives is specifically disclosed as diphenyl disulfide in an amount from 0.01 to 5 wt% (column 4, lines 30, 51-53).

Although Matsushita does not specifically disclose the additive as an extreme pressure agent, given that the property of a compound is inseparable from the compound, it would intrinsically function as such in a lubricating composition (*In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)). Since Anantaneni discloses a metal working fluid comprised of an extreme pressure agent and Matsushita discloses that diphenyl disulfide is a conventional additive in the lubricant art, it would have been obvious for Anantaneni to also utilize this additive.

With respect to (viii) above, Zoch discloses a fuel composition utilized in internal combustion engines (column 1, lines 6-7). The composition is comprised of specific additives that provide increased combustion efficiency, reduced gaseous pollutant emissions, and reduced volatility of the fuel additive (column 1, lines 44-49). One such additive is disclosed as isopropanol from 10 to 20 wt% (column 2, lines 16-25). Since Anantaneni discloses a lubricating composition for an internal combustion engine that can be utilized in fuels (column 31, lines 57-65), and Zoch discloses the advantage of an isopropanol additive to a fuel composition, it would have been obvious for Anantaneni to also utilize this additive.

With respect to (ix) above, Otaki discloses a lubricant composition for use in high temperature applications (column 1, line 66 through column 2, line 3). One extreme

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pressure additive is specifically disclosed as calcium carbonate, which clearly overlaps the instantly claimed alkali metal component, in an amount from 1 to about 16 wt% (column 2, lines 25-29; column 3, lines 56-60). This additive is selected since it can function under extremely high pressure conditions (column 3, lines 60-62). Therefore, since Anantaneni discloses a lubricating composition comprised of extreme pressure agents for an internal combustion engine, a high temperature environment, and Otaki discloses a specific extreme pressure agent for a high temperature environment, it would have been obvious for Anantaneni to also utilize this additive.

With respect to (x) above, given that the combination of the above cited references leads to the claimed composition as explained above, therefore the composition would intrinsically also form an emulsion when stirred with 60 to 90 wt% water so that the resulting emulsion is useful as a cutting oil and a coolant, has less toxicity than mineral oil, and adds value to a waste product.

Response to Arguments

10. Applicant's arguments, filed 11/10/2008, with respect to Eckard (US 6,225,267) have been fully considered and are persuasive. The rejection has been withdrawn.

11. Applicant's arguments filed 11/10/2008 have been fully considered but they are not persuasive.

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Specifically, applicant argues (A) that the instant claims and invention is directed to the composition of a metalworking fluid, which is different from Anantaneni whom is directed to the synthesis of alkyl benzene.

With respect to argument (A), Anantaneni specifically teaches that the produced alkyl benzenes are added to hydrocarbon oils with the incorporation of various additives to produce an engine fluid (column 1, lines 14-19; column 21, lines 38-45). Therefore, Anataneni specifically discloses a composition for use as a metalworking fluid. Although the majority of the Anantaneni patent refers to the production of the alkyl benzene, this is irrelevant since Anantaneni still teaches the metalworking composition.

Specifically, applicant argues (B) that the alkyl benzene instantly claimed is different from the alkyl benzene disclosed by Anantaneni.

With respect to argument (B), the instant claim 1 only broadly discloses a detergent class alkyl benzene. Anantameni clearly meets this broad limitation (see abstract). The instant claim 1 does not recite the limitation that the alkyl benzene is a heavy alkylate or product of fractionation as argued in Applicant's remarks. Additionally, although Anantaneni is not directed to an invention that is less toxic than mineral oil, this is not persuasive. This is a characteristic of the compound and therefore not given full patentable weight. The composition of the combined references above is capable of encompassing this characteristic, absent evidence to the contrary.

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Specifically, applicant argues (C) that the instant invention uses the alkyl benzenes with water so that their wt% is much lower than disclosed by Anantaneni.

With respect to argument (C), the claims merely teach wherein the alkyl benzenes are added to the composition from 40 to 85.68 wt%. The final composition is then capable of forming an emulsion when added to water. Anantaneni teaches a composition with a wt% of alkyl benzenes that overlap the instantly claimed range. This composition is also capable of forming an emulsion when added to water, absent evidence to the contrary.

Specifically, applicant argues (D) that Anantaneni discloses the use of additives but does not disclose the specific additive instantly claimed.

With respect to argument (D), the basis of a 35 USC 103 rejection is that the primary reference does not teach all the claimed elements. The secondary references are used to show that those additives are well known in the art so that it would have been obvious for Anantaneni to use those specific additives.

Specifically, applicant argues (E) that the sulfonate used by Boffa is not the same as in the instant invention and the sulfonate is not suitable for cutting oil.

With respect to argument (E), the instant claim 1 only broadly recites a sulfonate emulsifier. Therefore the sulfonate of Boffa clearly overlaps this broad limitation. Additionally, the instant specification does not even support the limitation of the cutting oil. Furthermore, Applicant argues that the sulfonate is not suitable in a cutting oil since

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it does not reduce rusting. However, this characteristic is not necessary for cutting oil and would only be an enhancement to the cutting oil.

Specifically, applicant argues (F) that the inventions and compositions of Tanaka, Carmenzind, Van Dam, Matsushita, Zoch, and Otaki are different from the instant invention.

With respect to argument (F), each of the above references teaches that specific components are well known in the art and obvious to use with the Anantaneni composition. Therefore, the fact that the above references teach different final compositions is not persuasive since they are only used to teach a specific component.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMY T. LANG whose telephone number is (571)272-9057. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anhtuan Nguyen can be reached on 571-272-4963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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01/22/2009

/Amy T Lang/

Examiner, Art Unit 3731

/Anh Tuan T. Nguyen/

Supervisory Patent Examiner, Art Unit 3731